

# Delivery Range Skolan dB Soundproof Pipe System



ISO 9001

www.ostendorf-kunststoffe.com





# Skolan dB

Silence is an important essential of human living. Only seldom we experience true silence in our surroundings. It is precisely this pleasant quietness which distinguishes the Skolan dB discharge system from others.

# Benefits and Advantages of the System

- WALL THICKNESS = QUIETNESS = COMFORTABLE LIVING
- 20 DB (A) ACC. TO DIN EN 14366
  FULFILLS THE REQUIREMENTS OF INCREASED SOUND INSULATION
   RESP. VDI SOUND INSULATION LEVEL III
- CORROSION RESISTANT
- EASY TO INSTALL
- INSTALLATION WITH USUAL STANDARD
  PIPE CLAMP
- FULL WALL TECHNOLOGY, HOMOGENOUS WALL CONSTRUCTION
- PULL-OUT PROTECTION FOR HIGH REQUIREMENTS IN THE AREAS OF PRESSURE AND NEGATIVE PRESSURE (RAIN DOWN PIPES / LIFTING SYSTEMS)
- FULFILLS ECONOMIC AND ECOLOGICAL CRITERIA
- CAN BE USED IN ALL FIELDS OF BUILDING CONSTRUCTION
- EXCELLENT MECHANICAL AND
  ACOUSTIC PROPERTIES
- EXTREME SOUND INSULATION
- PREVENTION OF SOUND TRANSMISSION
- AIBORNE SOUND IS REDUCED BY HIGH BASIS WEIGHT
- SAME WALL THICKNESS OF PIPES AND FITTINGS

Quality without compromise

# Material Properties Skolan dB

# Soundproof Pipes and Fittings

# **Commercial Name**

Skolan dB

# Material

mineral-reinforced polypropylene (PP) normal inflammability as per DIN 4102 B2

# Production

DiBT approval Z-42.1-217

#### Application

Sound proof pipe system Drainage within the building structure until the transfer chamber - waste water pipe - rain water pipe - ventilation pipe (see also areas of application: DIN 1986-4)

# Nominal diameters (DN)

56 / 70 / 90 / 100 / 125 / 150 / 200

#### Colour

Light grey RAL 7035

#### Seal

Factory inlaid SBR lip seal acc. to DIN 681

# **Chemical Resistance**

Discharge of aggressive media in the range of pH2 – pH12 see also www.ostendorf-kunststoffe.com

# Marking

## Pipes and Fittings

Permanent marking with manufacturer label, Skolan dB, nominal diameter, approval Z-42.1-217, date of manufacture, material, building material class (fire behaviour) (Fittings additionally bear information about the nominal angle.)

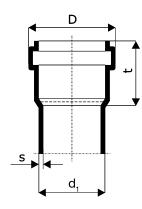
# Sound insulation

Measured value: 20 dB (A) Sound insulation test acc. to DIN EN 14366 (Fraunhofer Institut)

## Central vacuum cleaning system

Test certificate by MPA Darmstadt





DN(OD)	d <sub>1</sub>	s [mm]	D [mm]	t [mm]
56	58	4,0	76	55
70	78	4,5	97	61
90	90	4,5	110	55
100	110	5,3	132	76
125	135	5,3	160	61
150	160	5,3	188	95
200	200	6,2	234	123



Increased Living Comfort with increased Sound Insulation

# Skolan<sup>B</sup>

# **PRODUCT RANGE**

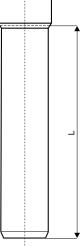
SKOLAN DB

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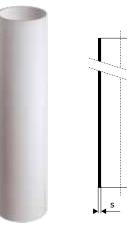
# Skolan – Pipe

	No.	DN	L [mm]	Unit
	332000	56	150	4/660
	332010	56	250	4/440
	332020	56	500	4/220
	332040	56	1000	1/114
	332060	56	2000	1/114
W!	332070	56	3000	1/114
	333300	70	150	4/360
	333010	70	250	4/240
	333020	70	500	4/152
	333040	70	1000	1/70
	333060	70	2000	1/70
W!	333070	70	3000	1/70
	334000	90	150	4/224
	334010	90	250	4/168
	334020	90	500	4/100
	334040	90	1000	1/60
	334060	90	2000	1/60
W!	334070	90	3000	1/60
	335000	100	150	4/180
	335010	100	250	4/120
	335020	100	500	2/78
	335040	100	1000	1/40
	335060	100	2000	1/40
W!	335070	100	3000	1/40
	336000	125	150	1/120
	336010	125	250	1/96
	336020	125	500	1/48
	336040	125	1000	1/24
	336060	125	2000	1/24
W!	336070	125	3000	1/24
	337000	150	150	1/84
	337010	150	250	1/48
	337020	150	500	1/35
	337040	150	1000	1/21
_	337060	150	2000	1/21
W!	337070	150	3000	1/21
	338000	200	150	1/45
	338010	200	250	1/30
_	338020	200	500	1/20
	338040	200	1000	1/15
_	338060	200	2000	1/15
N!	338070	200	3000	1/15



# SKGL – Plain ended pipe

	e e e e le le e			
No.	DN	s [mm]	l [mm]	Unit
332080	56	4,0	3000	1/114
333080	70	4,5	3000	1/70
334065	90	4,5	2000	1/60
334080	90	4,5	3000	1/60
335080	100	5,3	3000	1/40
336080	125	5,3	3000	1/24
337080	150	5,3	3000	1/21
338080	200	6,2	3000	1/15



# Skolan – Fitting

# SKB – Bend 15°

No.	DN	α	z <sub>1</sub> [mm]	z <sub>2</sub> [mm]	Unit
332100	56	15°	6	8	4/1000
333100	70	15°	7	11	4/600
334100	90	15°	6	12,5	4/500
335100	100	15°	9	16	4/300
336100	125	15°	10	16	4/180
337100	150	15°	23	22	4/100
338100	200	15°	15	31	1/40

# SKB – Bend 30°

No.	DN	α	z <sub>1</sub> [mm]	z <sub>2</sub> [mm]	Unit
332110	56	30°	10	15	4/1000
333110	70	30°	12	15	4/600
334110	90	30°	13	18,5	4/480
335110	100	30°	17	21	4/300
336110	125	30°	20	24,5	4/160
337110	150	30°	24	34	4/100
338110	200	30°	29	46	1/40

# SKB – Bend 45°

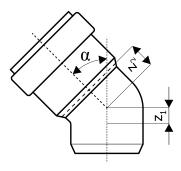
No.	DN	α	z <sub>1</sub> [mm]	z <sub>2</sub> [mm]	Unit
332120	56	45°	14	16	4/1000
333120	70	45°	18	31	4/600
334120	90	45°	20	25,5	4/400
335120	100	45°	25	29	4/240
336120	125	45°	30	34	4/140
337120	150	45°	37	45	4/60
338120	200	45°	46	57	1/38

# SKB – Bend 67°

No.	DN	α	z <sub>1</sub> [mm]	z <sub>2</sub> [mm]	Unit
332130	56	67°	23	21	4/880
333130	70	67°	28	31	4/500
335130	100	67°	40	44	4/200

# SKB – Bend 87°

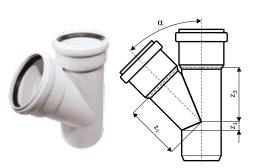
No.	DN	α	z <sub>1</sub> [mm]	z <sub>2</sub> [mm]	Unit
332140	56	87°	32	35	4/880
333140	70	87°	40	43	4/480
334140	90	87°	46	49,4	4/320
335140	100	87°	57	61	4/220
336140	125	87°	69	71	4/96
337140	150	87°	84	91	2/60





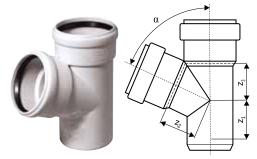
# SKEA – Branch 45°

No.	DN	α	z <sub>1</sub> [mm]	z₂ [mm]	z <sub>3</sub> [mm]	Unit
332200	56/56	45°	13	74	74	4/440
333210	70/56	45°	3	88	85	4/320
333200	70/70	45°	20	98	98	4/260
334220	90/56	45°	3	97	84	4/264
334210	90/70	45°	12	105	103	4/216
334200	90/90	45°	20	110	110	4/180
335220	100/56	45°	17	108	95	4/180
335210	100/70	45°	6	122	115	4/140
335200	100/100	45°	25	136	136	4/100
336210	125/100	45°	11	155	152	2/70
336200	125/125	45°	49	169	169	2/56
337210	150/100	45°	2	168	162	2/46
337200	150/150	45°	37	195	195	2/28
338210	200/150	45°	19	221	218	1/20
338200	200/200	45°	46	244	244	1/15



# SKEA – Branch 67°

No.	DN	α	Z <sub>1</sub> [mm]	z <sub>2</sub> [mm]	z <sub>3</sub> [mm]	Unit
332300	56/56	67°	22	45	45	4/500
333310	70/56	67°	18	55	51	4/360
333300	70/70	67°	29	61	61	4/280
335320	100/56	67°	21	73	57	4/180
335310	100/70	67°	22	81	67	4/140
335300	100/100	67°	40	84	84	4/120



# SKEA – Branch 87°

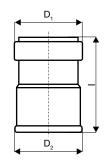
	No.	DN	α	z <sub>1</sub> [mm]	z <sub>2</sub> [mm]	z <sub>3</sub> [mm]	Unit
	332400	56/56	87°	33	34	34	4/500
	333410	70/56	87°	32	43	32	4/360
	333400	70/70	87°	40	43	43	4/320
	334420	90/56	87°	32	48	31	4/320
	334410	90/70	87°	43	49	40	4/240
	334400	90/90	87°	56	70	51	4/160
	335420	100/56	87°	28	60	32	4/200
	335410	100/70	87°	40	60	45	4/160
	335400	100/100	87°	57	59	59	4/140
	336410	125/100	87°	70	73	72	4/80
	336400	125/125	87°	70	72	72	2/80
NEW!	337410	150/100	87°	55	68	85	2/46
NEW!	337400	150/150	87°	81	91	91	2/32

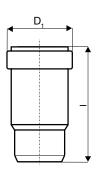


# SKAM – Single socket

No.	DN	D <sub>1</sub> [mm]	D <sub>2</sub> [mm]	l [mm]	Unit
332810	56	76	79	120	4/860
333810	70	97	100	120	4/640
334810	90	110	110	120	4/416
335810	100	132	132	123	4/300
336810	125	160	159	142	4/160
337810	150	188	184	143	4/120
338810	200	239	225	229	1/45







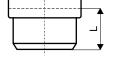


# SKL – Long socket

No.	DN	D <sub>1</sub> [mm]	l [mm]	Unit
335930	100	110	196	4/200

# SKM – Plug

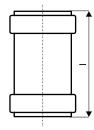
DN	L [mm]	Unit
56	49	4/1700
70	52	4/1000
90	36	4/720
100	57	4/580
125	60	4/376
150	70	4/260
200	85	2/160
	56 70 90 100 125 150	56      49        70      52        90      36        100      57        125      60        150      70





# SKU – Coupler

No.	DN	l [mm]	Unit
332500	56	105	4/1100
333500	70	107	4/640
334500	90	98	4/320
335500	100	125	4/300
336500	125	123	4/180
337500	150	129	4/96
338500	200	239	1/54



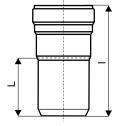






# Connection to an HT

No.	DN	L [mm]	l [mm]	Unit
332820	56	50	52	4/2200
333820	70	59	112	4/800







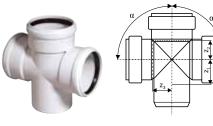


# Connection to HT/KG\*

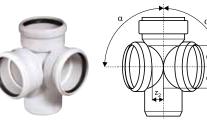
No.	DN	L [mm]	l [mm]	Unit
336820	125	64	255	4/160

\* (delivered with socket DN 125)

SKDA – Double branch 87°						
No.	DN	α	z₁ [mm]	z₂ [mm]	z <sub>3</sub> [mm]	Unit
334900	90/90/90	87°	46	51	51	1/121
335900	100/100/100	87°	56	60	60	4/80

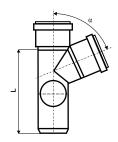


:	SKED – I	Double corne	er branc	h 87°				
	No.	DN	α	z, [mm]	z <sub>2</sub> [mm]	z <sub>3</sub> [mm]	Unit	(
NEW!	334910	90/90/90	87°	-	-	-	1/72	
	335910	100/100/100	87°	59	73	62	1/72	



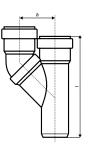
SKEP – Double Corner Branch, lower inlet						
Ν	lo. D	Να	L [mm	n] Unit		
NEW! 335	5975 100/100	0/70 left 87°	295	1/60		
NEW! 33	5985 100/100	/70 right 87°	295	1/60		

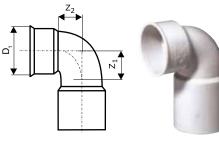




SKPA – Par	allel branch				
No.	DN	z <sub>1</sub> [mm]	a [mm]	l [mm]	Unit
335920	100/100	199,5	129	320	2/90



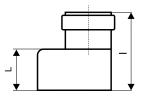




# SKSW – Siphon bend 90°

No.	DN	D <sub>1</sub> [mm]	z <sub>1</sub> [mm]	z <sub>2</sub> [mm]	Unit
335940*	56/40	50	30,5	25	4/1200

SKGM - Gaske	et	suitable for SKSW	iron pipe diameter
881210	DN 40/30 B	DN 50/40	28–34 mm
881220	DN 40/40 C		38–44 mm





# SKR – Reducer, eccentric

No.	DN	l [mm]	L [mm]	Unit
333710	70/56	102	60	4/860
334720	90/56	84	65	4/800
334710	90/70	105	60	4/640
335720	100/56	104	61	4/660
335710	100/70	104	61	4/640
335700	100/90	127	58	4/440
336710	125/110	133	90	4/240
337710	150/100	195	100	4/212
337700	150/125	190	100	4/120
338710	200/150	272	143	2/60



SKRHT – Redu	ucer Skolan/	HT	
No.	DN	l [mm]	L [mm]

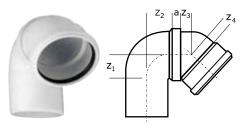
No.	DN	l [mm]	L [mm]	Unit
332750	56/40	89	60	4/1000
333750	70/50	110	78	4/1140



# SKRE – Inspection pipe

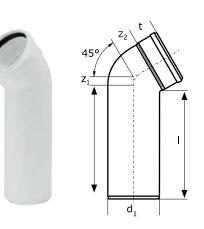
No.	DN	L [mm]	Unit
332600	56	-	4/480
333600	70	136	4/320
334600	90	172	4/240
335600	100	275	4/96
336600	125	344	2/40
337600	150	380	1/40
338600	200	410	1/20

Return	air bend 13	5°						
No.	DN	α	Z₁ [mm]	z <sub>2</sub> [mm]	z <sub>3</sub> [mm]	Z <sub>4</sub> [mm]	a [mm]	Unit
335950	100/100/100	135°	78	58	44	44	19,5	1/110



# Long bend 45°

No.	DN	α	t [mm]	ا [mm]	D <sub>1</sub> [mm]	Z₁ [mm]	z <sub>2</sub> [mm]	Unit
335960	100	45°	57	250	110	24	28	2/112



# Skolan – Accessories

# SK – Lip seal

No.	DN	Unit
880600	56	-
880610	78	-
880040	90	-
880050	110	-
880640	125	-
880420	160	-
880430	200	-

# SK – NBR gasket (resistant against oils, petrol and fats (animal, vegetable, mineral))

No.	DN	Unit
880700	56	-
880710	78	-
880240	90	-
880260	110	-
880740	125	-
880520	160	-
880530	200	-

# $\bigcirc$

# SK – Gasket for siphon bend

No.	DN	D <sub>1</sub>	$D_2$	Unit
881210	40/30 B	50	28-34	20/4800
881220	40/40 C	50	38-44	20/4800



# Skolan – Accessories



# Gasket for SKAM – Single sockets

No.	DN	Unit
881440	56	-
881450	70	-
881460	90	-
881470	100	-
881480	125	-
881490	150	-
881495	200	-

# SK - Pull-out protection

No.	DN	Rohr-außen-Ø mm	Karton	Unit
881505	DN 56	56	50	1
881515	DN 78	78	30	1
881520	DN 90	90	20	1
881530	DN 110	110	20	1
881545	DN 135	135	9	1
881550	DN 160	160	10	1

Further information and installation instruction at www.ostendorf-kunststoffe.com

# SK – Ostendorf BS Fire protection sleeve

No.	Rohr-außen-Ø mm	Karton	Unit
881605	56	25	1
881610	75–78	25	1
881620	90	10	1
881630	110	10	1
881650	160	5	1

Further information and installation instruction at www.ostendorf-kunststoffe.com

# SK – Safety clamps for plugs

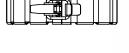
No.	DN	Unit
839010	56	-
839020	70	-
839030	90	-
839040	100	-
839050	125	-
839060	150	-

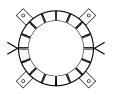


No.	DN	Unit
839080	56	-
839090	70	-
839100	90	-
839110	100	-
839120	125	-
839130	150	-

#### SK - Lubricant

No.	ml	Unit
881800	150	50/1750
881810	250	50/1800
881820	500	24/864
881830	1000	12/432







\*sample colour









# SKOLAN DB THE COMFORT PROTECTION



# Sound Insulation

# THE SKOLAN dB HOUSE DISCHARGE PIPE SYSTEM – High degree of sound insulation

#### System description

Skolan dB represents a complete range available to you in DN 56 to DN 200 nominal diameter. It is suitable for all pressureless waste water pipes in acc. with DIN EN 12056 and DIN 1986-100.

Pipes and fittings consist of mineral-reinforced polypropylene and are resistant to hot water. The consistently thick-walled pipes and fittings meet the raised requirements of Sound Insulation Class III of DIN 4109 / VDI 4100.

Just as with all synthetic materials, Skolan dB is corrosionproof, long-lasting and resistant to chemically aggressive waste water in the range of pH 2 to pH 12. The smooth inner surfaces and high degree of resistance to abrasion make sure that no deposits develop and this, in turn, ensures that the pipes can be reliably operated for a very long time.

#### Sound insulation

Tests conducted by the Fraunhofer Institut in 2010 in accordance with DIN EN 14366 confirmed the excellent sound insulation properties and the maximum Sound Insulation Class III requirements. It has been proved for many years now on the physical construction side that thick-walled pipe systems with very high molecular weight minerals have excellent sound insulation properties.

The high density of 1.6 g/cm<sup>3</sup> (+/- 0,05) contributes to the absorption of sound which is transmitted by air and conducted by solids.

# Sources of noise in building equipment

The sources of noise in building services installations are:

- Filling noises
- Intake noises
- Noises from fittings
- Draining noises
- Impact noises

#### How does sound develop in building equipment?

The biggest problem in building equipment is where structure-borne noise is transmitted at the point of pipe fixing and where pipes are installed in walls and ceilings.

The following are the most important steps in actively furthering sound insulation:

- No sound bridges to adjacent rooms with pre-wall installation. The pre-wall installation is to be acoustically disconnected
- No exposed installation of waste water pipes on the walls of rooms to be sound insulated
- Use of low-noise fittings of Group I as per DIN 52218
- Use of walls which are suitable for installations, e.g. 220 kg/m<sup>2</sup> (large mass)
- In waste water system pipe planning, no waste water pipes are to be installed in partition walls between flats/ houses

- Skolan dB pipes are to be jacketed in insulating material as conforming to the requirements of sound/heat insulation and fire protection when installed in walls and ceilings/ floors
- Acoustically favourable floor plans should be drawn up so that rooms in need of sound insulation are not arranged directly next to rooms with sanitary installation-equipped walls or under bathrooms/toilets.

#### Benefits DN 90

DN 90 can now be used for collecting pipes, downpipes and pipelines. As a result, a complete discharge pipe can now be installed with only two dimensions (DN 56 and DN 90). DN 90 also provides other benefits such as little space needed in the supply shaft and in pre-wall installation. The smaller diameter ensures effective automatic cleaning in the pipe. A DN 90 collecting pipe can be used:

- Up to a 10 m length
- · For connecting a maximum of 2 six litre flushing tanks
- For connecting a maximum of 6 sanitary items
  - Given a gradient of 1 cm/m (1:100)
  - With a max. 3 changes of direction of 90° or 2 x 45°



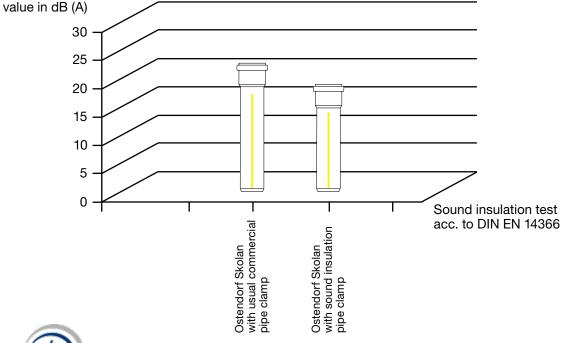
# Sound insulation in building construction The minimum requirements for sound insulation according the building authorities are specified in the standard DIN 4109/A1.

According to DIN 4109/A1 the characteristic sound pressure level due to installation noise of sewage systems in rooms in need of protection must not be more than 30 dB (A) for living and bed rooms resp. not more than 35 dB (A) for teaching rooms and offices.

# Sound insulation advice for sanitary installations acc. to VDI

• valid for sewage systems inside buildings

- VDI 4100 specifies three different sound insulation levels
- Sound insulation level I requirements of DIN 4109 corresponding to 30 db (A)
- Sound insulation level II higher sound insulation corresponding to 25 dB (A)
- Sound insulation level II increased sound insulation corresponding to 20 dB (A)



# **Skolan** VDI sound insulation levels and classification



One family houses Sound insulation level I or on agreement

Sound insulation - value



Apartment buildings, residential and office buildings, comfort apartemtents Sound insulation level II or higher



Hotels, hospitals, residential complexes Sound insulation level III enhanced agreements

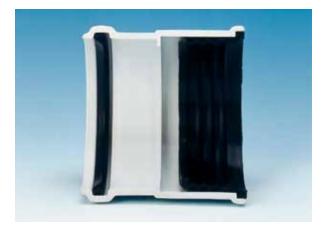
# Installation Instructions

# 1. TRANSPORT, HANDLING AND STORAGE

Skolan-dB pipes must not be bent during transport; the full length of the pipes should be supported. The pipes are to be laid down in such a manner that no damage occurs through deformation. Sockets must be unencumbered all around. At the construction site, stacking must not be carried out in excess of 1.50 m even if wood is laid down in between layers. Sealing elements may not be stored outside for longer than 2 years.

# 2. CUTTING THE PIPES TO LENGTH

The pipes can be cut to length with a commercial pipe cutter or with a fine-toothed saw. The cuts are to be made at an angle of 90° to the pipe shaft. Remove any trimmings or bumps at the disconnecting point. The cutting edges are to be smoothened on the inside and on the outside.



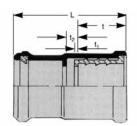
#### 3. SKOLAN-DB CONNECTIONS

# 3.1 PUSH-FIT CONNECTIONS WITH GASKET (SINGLE SOCKET)

Single sockets are equipped with larger sealing element: These gaskets are the standard connection between pipes and fittings. They have an extension compensator so that no measures need to be taken to allow for changes in length. The following procedure is to be observed:

- Trim the spigot end of the pipe and clean if necessary. Chamfering is not required
- Remove the gasket from the socket and pull it without any lubricant onto the spigot end of the pipe
- Smear the outside of the gasket with lubricant (do not use oil or grease) and also provide the inside of the socket with lubricant

- Push the spigot end with the gasket into the socket
- Push the single socket onto the spigot end until it resists
- Check the correct position of the gasket



DN	L [mm]	t [mm]	t <sub>1</sub> [mm]	t <sub>2</sub> [mm]
56	126	49	5	15
70	119	48	6	16
90	123	47	6	16
100	125	63	6	16
125	132	63	6	16
150	144	63	6	16
200	228,5	109	6	16





#### 3.2 OTHER PUSH-FIT CONNECTIONS

Push-fit connections between pipes and fittings which are not produced with a single socket must, in the case of a maximum pipe length of 3 metres, compensate thermal changes in length of maximum 10 mm. Therefore pipes are to be pulled back 10 mm in the socket after the connection has been made.

- Clean the spigot end, the socket and the gasket if necessary
- Check the position and the intactness of the gasket in the socket corrugation
- Smear the spigot end with lubricant.
- Place the spigot end in a central position and push it into the socket until it resists
- Pull the pipe not the fitting back by 10 mm and in case of a vertical position - protect the pipe from subsequent slipping by means of clamps

Additional connection couplings (such as those required in the case of cast-iron pipes) are not necessary with Skolan dB.

Push-fit connections are easier and quicker. This saves time and material.

#### 4. INSTALLATION

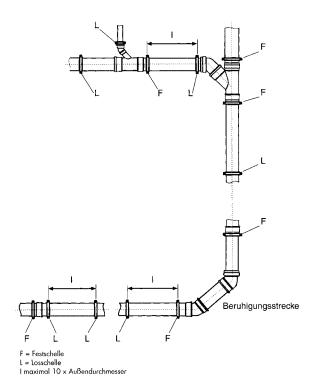
Skolan dB pipes are to be installed in such a manner that they are free of tension and that changes in lengths are not hindered. The Skolan dB soundproof pipe system is installed by using commercial pipe clamps with inserting tapes made of profile rubber.

Arranging the pipe clamps:

- The distance between the pipe clamps in the case of horizontal piping is approx. 10 x the exterior pipe diameter
- In the case of vertical installation the distance between clamps should be 1–2 metres, however, 2 metrees should not be exceeded
- If possible, do not install pipe clamps directly at the zones of impact
- A fixed clamp and a loose clamp per pipe length (storey height of more than 2.50 m) are recommended for drop pipe lines
- Fixed clamps are fixed points in the piping system. In the case of pipes without sockets, the fixed clamp is to be placed directly above the shaped part at the bottom end of the pipe. Fittings or groups of shaped parts are always to be located as fixed points
- Even when they are installed, loose clamps enable unhindered lengthways movements in order to allow for thermal changes in length
- In multi-storey buildings, drop pipes are to be secured against subsidence. The use of an adjustment length with a fixed clamp under the socket is recommended



Pipe clamp with inserting tape as a loose clamp



Examples for the arrangement of fixed clamps and loose clamps

#### 5. INSTALLATION IN CONCRETE/ BRICKWORK

Skolan-dB pipes and fittings can be directly set in concrete or plaster provided that adequate care is taken. In order to prevent the concrete mixture from seeping into the socket gap, it should be sealed with adhesive tape. Open piping components are to be closed. The piping is to be installed in such a manner that it is prevented from moving during the cementing process. Should the piping be plastered under a gap in the wall, a layer of plaster of at least 1.5 cm should be applied onto a plaster support (e.g. metal mesh). No acoustic bridge for structure-borne sound should be allowed to develop between the piping and the plaster support. In order to prevent this, the piping should be fully covered with sound insulation material (e.g. mineral wool, insulating sheaths).

# 6. RAIN DOWN PIPES

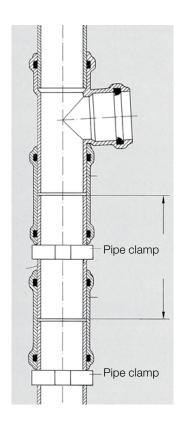
If rain down pipes are installed through living areas, a condensate insulation is recommended also for the Skolan dB, measurement and evaluation according to DIN EN 14366, test result of the Fraunhofer Institut (test report P-BA 63/2010) 20 dB (A) sound insulation with a usual standard pipe clamp. Installation instruction of the pull-out protection at www.ostendorf-kunststoff.com.

## 7. CEILING PIPES

Pipes installed through ceilings must be sound-insulated with structure-borne sound insulation material and be dampproof. Should melted asphalt be put onto the floors, the piping parts in the region where the pipe runs through the ceiling must be protected by means of protective pipes or by means of being wrapped in heat-insulating materials.

#### 8. SUBSEQUENT INSTALLATION OF PIPING PARTS

Subsequent connections can be produced by means of the installation of a branch or by using couplers. In order to install, a sufficiently long piece of pipe (L = length of the shaped part + 2.5 d) is removed and the branch is inserted. Cutting edges are to be cleaned and smoothened. A coupler is pushed onto both the remaining pipe without a socket and onto a piece of pipe equivalent to the gap. The piece of pipe is then inserted into the piping and the couplers are pushed over the cutting edges. The couplers are to be secured by means of clamps.



#### 9. BENEFITS DN 90

According to the new DIN 1986-100 diameter DN 90 is required for water-saving toilets with 4,5 to 6 I flush volume. All over Europe water-saving toilets have been used for years with the dimension DN 90 without any problems. Further information at www.ostendorf-kunststoffe.com.



# Pull-out protection

#### Convincing facts:

- 1. Increased safety through stronger hold at high pressure
- Applicable for lifting systems up to max. 2 bar overpres sure according to MPA Darmstadt (without pressure surges)
- 3. Use for rain down pipes up to max. 2 bar overpressure
- 4. Easy application with "clamp lock" without screwing



#### Practical application:

The stability and the functionality of a discharge system have to be ensured by a secure fastening. Discharge systems within the buildings structure can be subject to bigger inner pressure caused by particular stresses (for example the rain down pipe at heavy rainfall events).

This can refer to the following pipe lines:

- rain pipes in the back water level (mostly in basements)
- rain down pipes, which go from the roof through more floors without further drain outlets
- rain water pipes in the area of distortions from the down pipe to the collection pipe (particulary at a falling pipe height of more than 22m)
- · conveying pipes of discharge lifting systems

# Ostendorf BS Fire protection sleeve



#### **Product Properties**

- Pipe screening R 90 for HT System (PP) pipe lines through walls (massive walls or light partition walls) and under ceilings
- Easy and fast installation due to a two-part sleeve
- Suitable for the use in moist rooms (no risk of corrosion)
- Installation without additional fixation possible, by bending of the straps in the fresh concrete resp. grout
- For standard mounting conditions as well as for difficult assembly situations (slantingly through the wall), here the sleeve can be chosen up to three dimensions bigger
- Zero distance possible between the same sleeves
- Approval DiBt Z-19.17-1651 as well as external monitoring by MPA Braunschweig



Installation instruction of the pull-out protection at www.ostendorf-kunststoffe.com

Further information and installation instruction of the fire protection sleeve at www.ostendorf-kunststoffe.com

# Products by Gebr. Ostendorf Kunststoffe GmbH

HT-System (PP) Discharge Pipes and Fittings DN 32–DN 160 acc. to DIN EN 1451-1

Soundproof Pipe System DN 56-DN 200 acc. to Z-42.1-217

# KG 2000 SN 10

Waste Water Pipes and Fittings DN 110–DN 500 acc. to DIN 14758

KG-System SN 4 (PVC-U) - Coex SN 8 (PVC-U) - Full Wall SN 10 (PVC-U) Drainage Pipes and Fittings DN 110–DN 500 acc. to DIN EN 13476-2 and DIN EN 1401

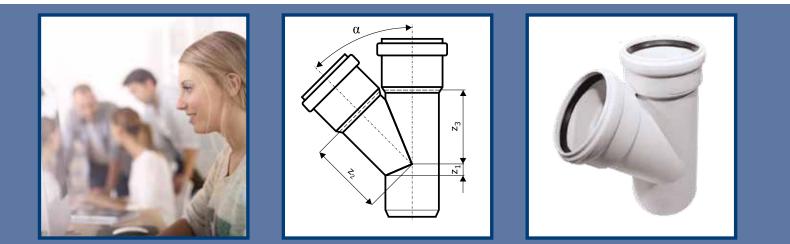
> Ostendorf Chamber System DN 400 (PP) (PVC-U) Chamber bases, Riser pipes and Telescopic covers DN 400 acc. to DIN 13598

# Ostendorf Chamber System DN 600 (PP)

Chamber bases, Riser pipes and Telescopic covers DN 600 acc. to DIN 13598

# **PE Pressure Pipes Drinking Water**

Pressure Pipes for Drinking Water DN/OD 20-DN/OD 63 acc. to DIN EN 12201



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